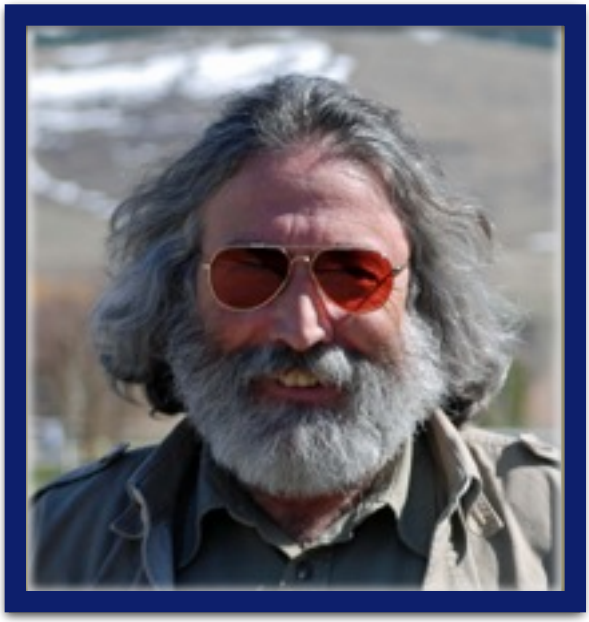
Daniel Goodman



From time to time we are blessed to have among us a truly great leader, scientist, teacher, or friend. Daniel Goodman, Professor of Ecology at Montana State University, was one of those rarest of individuals who combine all four of those attributes. We lost Dan on 14 November 2012. He died from complications of surgery to remove a recurrent tumor. He was 67, had achieved remarkable stature in his career, had trained an outstanding cadre of students, and was considered a near institution unto himself. By then, Dan had contributed greatly to environmental science and conservation, but still he yearned to do more.

Dan was born on 20 May 1945 in Cincinnati, Ohio. As a child he moved with his mother to Tel Aviv, Israel, where he attended high school and entered military service. He returned to the United States to attend Ohio State University, where he earned a B.S. in biology in 1966 and a Ph.D. in zoology in 1972.

From 1972 to 1974 Dan was a Research Associate in Cornell University's Program on Science, Technology, & Society and its Division of Biological Sciences. From 1975 to 1987 he intermingled various positions at Scripps Institution of Oceanography; the University of California, San Diego; and Montana State University. From 1987 to his death in 2012 he was a Professor of Biology (later changed to Ecology) at Montana State University.

Blessed with an extraordinary intellect, Dan worked at the highest theoretical levels of his vocation. In 1975 he published what might be considered the hallmark of his early career—a treatise on "The Theory of Diversity-Stability Relationships in Ecology." His commanding mathematical and statistical understanding and skills—measures of his exceptional powers of reasoning—were signatures of all his work.

But Dan devoted much of his subsequent work to applied environmental and conservation issues. Strengthening in his later years, his focus shifted to environmental risk analysis and decision making in the face of uncertainty. The breadth of his work ranged from assessing the risks of storing hazardous (e.g., nuclear) materials to managing salmonid populations in highly disturbed riverine ecosystems and conserving marine mammals. Many sought his advice and guidance because of his innate ability to describe, analyze, and resolve the most difficult problems ranging in nature from conceptual to practical.

Dan also was a consummate scholar. He resolved problems not simply by applying his great analytical skills, but also by drawing on his daunting knowledge of such things as economic theory and the origins of jurisprudence. After his death, Tim Gerrodette—one of Dan's colleagues and friends—wrote that "Dan had the ability to see farther than the rest of us, to see deeper concepts and connections behind the immediate cases at hand, and to make original contributions based on those deeper insights." In fact, his remarkable vision extended in a great many directions.

In a similar manner, Dan applied a broad range of analytical tools to his work, shifting over time from more traditional statistics to a strong preference for Bayesian methods. He viewed the Bayesian approach as more flexible or adaptable because it allowed the analyst to shape an analytical model based on the available information rather than requiring the analyst to shape the information to fit a pre-existing model structure. He applied this approach broadly, such as for estimating extinction risks for species that may require special protection under the Endangered Species Act (i.e., population viability analysis). For several years prior to his untimely death, he was developing a review of Bayesian methods as applied to conservation decision-making in the face of uncertainty.

The last major project of Dan's career involved his participation on a National Academy of Science panel convened to assess the biological effects of various pesticides. He was deeply concerned that longstanding methods for assessing such effects were too simplistic for use with species listed under the Endangered Species Act. The night before Dan left his home in Bozeman to travel to Texas, where he would undergo surgery, he submitted to the panel his strong views on this matter.

In the field of marine mammal conservation, Dan's work will endure for many years. He served as a consultant to numerous agencies and organizations, including the Environmental Protection Agency, Marine Mammal Commission, National Academy of Sciences, National Marine Fisheries Service, Northwest Power Planning Council, and many others. His legacy will last even longer because he trained an outstanding group of students that, in Dan's fashion, are now contributing greatly to conservation by applying their well developed and finely honed analytical skills.

The mere presence of Dan Goodman brought assurance that reason would prevail, but he was more than just a great intellect. Admired for his brilliance, he also was respected and loved for his integrity, his ability to teach, and his patience, kindness, composure, generosity, and humor. The many tributes written for his memorial recognized his astounding intellect, but relished his uniqueness and humanity. Bert Harting wrote "I don't expect to ever meet anyone else even remotely like Dan. It wasn't just his intellect or his contributions to conservation that set him apart, though those accomplishments may be what are most celebrated in coming years; it also was his kindness, his humor, and his humanity. I'll miss the man a great deal." We all will. His great intellect led us in the struggle to overcome complex issues; his great kindness provided a safe haven when the challenges seemed overwhelming.

At his core, Dan was a naturalist. He hiked, canoed, hunted, and fished whenever he had the opportunity, and it was clear that Dan loved the outdoors. Like so many that partake of those activities, he used them to renew his deep and abiding love for the natural world.

And Dan had a deep and abiding love for his family—he was a devoted husband and proud father. He leaves behind his loving wife, Diane Brawner, and loving daughter, Rollie Goodman. Written on behalf of his many friends and colleagues, this obituary is a small expression of our thanks to Dan for all that he has done, for each of us personally and for environmental science and conservation generally. We owe an equal debt of gratitude to Diane and Rollie for their generosity in sharing this wonderful man with us.

Tim Ragen

Editor's note: Montana State University is hosting a symposium to honor Dan Goodman's contributions to environmental science and conservation on 20-21 March 2014 in Bozeman, Montana. See www.esg.montana.edu for more information.